How to Develop a Tool Box to Facilitate Transboundary Water Resources Management with an Emphasis on Water Quality

Mark Killgore and Daene McKinney
Environmental And Water Resources Institute
Fifth World Water Forum – Learning Centre

Thursday March 19, 2009
14:30 – 19:00 (2:30 – 7:00 pm)

Agenda

• 2:30 – 3:30 pm
  – Introduction to Transboundary Water Resources Management

• 3:30 – 5:00 pm
  – Agreements for Transboundary Water Resources Management

• 30 minute Break

• 5:30 – 7:00 pm
  – Tools for Transboundary Water Resources Management
Introduction to Transboundary Water Resources Management

- Welcome and Introductions
- Introduction to Transboundary Water Resources Management
- Participant’s Experience in Transboundary Water Resources Management
- Break

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What’s the Issue?

• In a world of plentiful water resources
  – No competition or tension over development, protection and use of water
  – Decisions made on a unilateral basis to meet national objectives
  – Effects on downstream countries largely ignored
  –

• In our world
  – Decisions made by consultation, negotiation, information sharing, and cost allocation among countries sharing a limited resource
  – Domestic and international politics, national priorities
  – Skewed perceptions of costs, benefits and risks of actions
  – Multilateral agreements on use, protection and development of transboundary water resources

Global Water Resources

A World of Salt
Total Global Saltwater and Freshwater Estimates

- Saltwater: 97%
- Freshwater: 3%
- Freshwater is divisible into:
  - Runoff: 2%
  - Groundwater: 55%
  - Glacial ice and permanent snow cover: 43%

Only this portion is renewable

Total = 1,386,000,000 km³
Fresh = 35,029,000 km³ (2.5% of total)
Usable = 138,600 km³ (0.01% of total)

Source: A. Shilkmanov, UNESCO, 1999
Global Water Cycle

Principal sources of fresh water for human activities

Source: I. A. Shiklomanov, UNESCO, 1999

Global Water Availability

Source: World Resources Institute, 2000-2001; People and Ecosystems: The Phryng: Atulof, Life, World Resources Institute (WRI); Washington DC, 2000
Population and Water Use

- Withdrawal (km³/yr)
- Population (million)

Global freshwater use is ~4000 km³/year (~10% of the renewable supply (44,800km³/year))

Global Water Use

Source: I. A. Shiklomanov, UNESCO, 1999
Global Water Withdrawal

Source: I. A. Shiklomanov, UNESCO, 1999

Water Stress (m3/person/year)

Relative sufficiency: > 1700 m³/person/year
Water stress: < 1700 m³/person/year - intermittent, localised problems
Water scarcity: < 1000 m³/person/year - chronic and widespread problems
International River Basins

Over 40% of the world lives in 263 shared basins

Water in the International Arena

• Several basins are regularly mentioned as having tension over shared river resources
Some Terminology

- **Watercourse** - A system of surface waters and groundwaters constituting a unitary whole and normally flowing into a common terminus (UN 97)

- **Riparian** - Beside or along the bank of a river

- **Transboundary** - extends over several nations

Transboundary Settings

- **Nationally**
  - Water rights and institutions are devised to rationally and equitably develop and use the resource

- **Internationally**
  - Water rights don’t exist between countries
  - Laws are enforced by international agreements between countries, not by an overarching authority
Water in Transboundary Settings

- Principles of International Water Law
  - Equality
  - Reasonableness
  - Avoidance of harming ones neighbors
  - Prevention of conflicts through
    - Information sharing
    - Notification and consultation of neighboring riparians of proposed works

International Water Law

- **Helsinki Rules** (see also new Berlin Rules)
  - “Rules on the Uses of the Water of International Rivers” (ILA, Helsinki, 1966)
- **Helsinki Convention**
  - “Convention on the Protection and Use of Transboundary Watercourses and International Lakes” (UN-ECE, Helsinki, 1992)
- **UN Convention**
    - [http://www.internationalwaterlaw.org/IntlDocs/Watercourse_Conv.htm](http://www.internationalwaterlaw.org/IntlDocs/Watercourse_Conv.htm)

- Framework documents
- Provide guidance for more specific, basin-level, multilateral agreements
Sovereignty and Integrity

- Sovereignty
  - Nation is supreme authority within a territory
  - National interest in protecting independence
  - Nations recognize that some problems require international cooperation
  - Most international treaties constrain a nation’s sovereignty

Sovereignty and Integrity

- Absolute territorial sovereignty
  - Nation may use water flowing into its territory for consumption or disposing of pollution with no regard for downstream nations
  - U.S. Attorney General Harmon’s 1895 response to Mexico’s protest over U.S. diversions from the Rio Grande river
  - “[T]he rules, principles and precedents of international law imposed no liability or obligation on the United States” – Judson Harmon
Sovereignty and Integrity

- **Absolute Territorial Integrity**
  - Downstream nation has a right to flow from upstream
  - Implies a veto power for downstream riparian
  - Nile (10 Riparians)
    - Burundi, Dem Rep of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda

Sovereignty and Integrity

- **Limited territorial sovereignty**
  - Every riparian has the right to use water flowing in its territory, provided that the use does not harm other riparians
  - Basis of Helsinki Rules
  - Examples
    - Nile – 1929 and 1959 treaties
    - Jordan - Johnston Plan
    - Rio Grande – 1906 and 1944 treaties
Helsinki Rules

- Distribution among riparians governed by:
  - Contribution to the drainage basin area
  - Climatic factors
  - Prior use
  - Economic & social needs
  - Population
  - Costs of meeting needs by alternative means
  - Availability of other resources
  - Avoidance of undue waste & damage downstream

UN Convention 1997

- Riparian states can utilize the resource in *an equitable* and *reasonable* manner in order to achieve *optimal* and *sustainable utilisation*
  - Includes *right to utilize* the watercourse and the *duty to cooperate* in use, development and protection
Factors Relevant to Equitable and Reasonable Utilization – UN 1997

1. Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
2. Social and economic needs of the States concerned;
3. Population dependent on the watercourse in each State;
4. Effects of the use of the watercourses in one State on other States;
5. Existing and potential uses of the watercourse;
6. Conservation, protection, development and economy of use of the watercourse and the costs of measures taken to that effect;
7. Availability of alternatives, of comparable value, to a particular planned or existing use.

- Weight given to each factor is determined by its importance in comparison with other relevant factors
- States shall enter into consultations in a spirit of cooperation

No Significant Harm – UN 1997

- Take all appropriate measures to prevent the causing of significant harm to other watercourse States

- Take all appropriate measures to eliminate or mitigate such harm and, where appropriate, to discuss compensation
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